neatly and satisfactorily than can be done when the patient is recovering from etherization. If the wound is one in which little oozing is expected, no change is made in the dressing at this time; and in all cases no change in the dressings is made after the first twenty-four hours, unless a rise in temperature, discomfort of the patient, or soaking of the discharge to the surface indicates a necessity for so doing.

SACRO-COCCYGEAL DIMPLES, SINUSES, AND CYSTS.

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This paper is intended to include the consideration of the origin of the congenital depressions, sinuses, and dermoid cysts found in the median line of the back over the coccyx and lower part of the sacrum, together with the pathological conditions to which they may give rise. It is chiefly from a surgical point of view that these sinuses and cysts have attracted attention, and, as a rule, it is owing to pathological changes occurring in them that the surgeon is consulted. In a typical case the patient, usually a young man, gives a history of irritation followed by one or more abscesses in the region of the lower end of the spine. The surgeon makes an examination, and, on separating the buttocks, finds in the median line over the coccyx a small congenital opening lined with epidermis. There are often one or more fistulous openings on the buttocks. On passing a probe into the congenital opening it penetrates upward to the extent of one or two inches toward the lower posterior portion of the sacrum. On laying the sinus open, it is found to terminate in a small abscess-cavity containing a coil or tuft of hair. The fistulous sinuses terminate in this same cavity. It is the presence of this hair at the bottom of these sinuses that has always excited the interest and curiosity of surgeons, as is evidenced by the titles under which they have published their cases, namely: "Hair Extracted from an Ulcer," "Three Cases of Pilous Cysts," "Monstrosity by Inclusion," "Pilonidal Sinus," "Abscess of the Sacrum; Hair."

For a full understanding of these congenital openings and abscess-cavities containing hair, it will be necessary to make a detailed study of the cases published, of the results thus far obtained, and of the theories advanced to explain them.

Of the three congenital abnormal formations (considered in this paper) found in the sacro-coccygeal region, viz., depression, sinus, and dermoid cyst, the first, or *depression*, is by far the most frequent. Hodges says: "There is found in many children a conical depression near the tip of the coccyx." According to Lannelongue, a cicatricial depression can be found in this region once in four or five cases in children. Heurtaux found more or less pronounced traces of an infundibulum in about 4 per cent. of the men and women he examined. Lawson Tait found a well-marked dimple present in 23 per cent. of the women he examined at the Birmingham Hospital for Women.

A *sinus* is much less frequent. It may vary in length from one to several centimetres, and in diameter from an orifice so small as scarcely to admit a knitting-needle up to an opening large enough to be mistaken for the anus. The depressions and sinuses are always situated in the median line in the fold between the buttocks; the opening into them is usually opposite the tip of the coccyx, but may be over the sacro-coccygeal articulation or the lower end of the sacrum. More rarely it lies between the tip of the coccyx and the anus. As a rule, there exists but one congenital opening into a sinus, but Lannelongue reports several cases in each of which he found three orifices present; Lamadrid reports one with an equal number, and Heurtaux had one case with three and another with four congenital openings into it. A similar case, probably, is that of J. C. Warren's, reported further on (Case XVIII.). The direction of the sinus is usually upward, between the skin and the coccyx, to the lower end of the sacrum, but it may be toward the tip of the coccyx; rarely, it runs up between the rectum and the coccyx (Case IV.). Abnormality of the coccyx has been not infrequently noted in connection with these sinuses. From the deeper of these there is sometimes a secretion containing fat and squamous epithelium. A case reported by Reclus (Case IV.) had a slight mucous secretion containing some débris of pavement epithelium. The lining membrane of these sinuses resembles skin, and hair is occasionally found growing from its surface (Case VIII.).

Dermoid cysts have not infrequently been found over the coccyx and lower part of the sacrum, some containing hair, others not; some were noticed at birth, others made their appearance in adult life (Cases XIV. and XV.).

Various theories have been advanced to explain, in the first place, the inflamed or suppurating sinuses containing hair, and, in the second place, the congenital depressions and sinuses. Of the suppurating sinus J. Mason Warren[43] says: "The origin of this singular affection is involved in obscurity. It would seem possible, however, that it may begin in the stout hair or hairs from a single follicle becoming in some way diverted from their normal direction and inverted upon themselves within the follicle itself; the continued growth of the hair would then result in the formation of a tangled knot or ball of hair which might readily give rise, after a time, to irritation, just as a similar accumulation of sebaceous matter in the follicles of the face may excite that form of inflammatory action known as acne. The occurrence of the disease in the median line between the folds of the nates may, perhaps, be explained by the constant pressure and moisture of the part softening both the newly-formed hair and the epidermic cells surrounding the mouth of the follicle." Vaughan's theory of the origin of these sinuses containing hair is the same. According to Gross, they originate in "a small, congenital pilocystic tumor" arising from a "sebaceous follicle which during development intercepts a small tuft of hair. This tumor, although always congenital, may remain a long time in a dormant state, causing little or no disturbance unless accidentally injured or irritated, when it may inflame and suppurate, causing, if left to itself, an angry, irritable ulcer; the parts around are red and swollen, and sometimes riddled with sinuses."

Although observing the congenital orifice over the coccyx in the cases he treated, J. Mason Warren made no attempt to explain its presence. Later writers have connected this congenital opening with the congenital dimple so often found in this region, and shaped their theories accordingly. Hodges[17] explains the origin of the sinuses containing hair as due to the hairs rubbed off from the body getting into the congenital dimples and causing inflammation and suppuration, especially in those cases where there is an abundant pilous development combined with insufficient attention to cleanliness. The dimple he considers as due to an imperfect union of the lateral halves of the body, involving the integument only.

According to Heurtaux,[15] an accumulation of epidermal and sebaceous products can take place in the congenital infundibula, especially if they are oblique and the orifices narrow. This retention can become the cause in certain cases of suppurative inflammation of the skin which forms the bottom of the sinus; the skin becomes ulcerated and perforated, pus gradually infiltrates the subcutaneous tissue and gives rise to the fistulous tract. When, owing to fleshiness, the narrowness and depth of the fold between the buttocks is increased, the chances of retention and of irritation are still greater. The growth of hair in these infundibula is very favorable to the development of fistulæ. Lamadrid's[19] theory is practically the same as Hodges'. "The patient was a very hairy man, and that accounts, I think, for the hairs getting into these openings, may be one at a time, caused by the breaking of them with the rubbing of his pants and shirt against his back while lying on his back or at the act of sitting—in fact, by anything that came in contact with his body."

In regard to the congenital dimple, Lawson Tait concludes that it is a cicatrix, and suggests that it is the hereditary cicatrix of the spina bifida by which the human tail has been lost.

According to Fere,[38] they are due to incomplete closure of the "posterior umbilicus"—in other words, the lower end of the medullary canal.

Terrillon[38] thinks them due to a special form of spina bifida, involving not the vertebral arches, but simply the skin. Lannelongue[21] gives the following explanation of their origin: "After the medullary canal is formed, the mesoblast passes back between the vertebral column and the external epidermis, except in the region of the sacrum, where little of this tissue is interposed, so that this region is reduced to epidermis and bone. Consequently, the superficial layer (epiblast), joined at a later period to the mesoblast, preserves closer relations with the bone, and at one or more points the skin may be bound down to the bone, and later, when the subcutaneous tissue is developed around these places, a depression will be formed. If deep and narrow enough, the orifice may close up, and a dermoid cyst be the consequence."

Inasmuch as we have, occurring in the same site, depressions, sinuses, and dermoid cysts, let us consider for a moment dermoid cysts and the other regions in which they are found. According to Sutton[36] dermoid cysts "occur along the lines of coalescence of the opposite halves of the body-wall and of the embryonic clefts." Lücke[22] says: "They are confined to certain fixed regions—median line of head, neighborhood of eye, sides of neck, testicles, and ovaries.

Lannelongue[20] states it thus: "Tout kyste dermoïde émané de l'enclavement ou de la persistance de l'ectoderme provenant d'une fissure embryonnaire."

Leaving out of the question dermoids of the ovaries and testicles, dermoid cysts occur most frequently in the region of the branchial clefts. Concerning them Klebs[18] says: "We can demonstrate all possible transitions, from open inversions of the external skin, such as not infrequently occur in the neck in the form of cleft- or sinus-like dermoids, to such as have only a very narrow communication with the skin, and finally, such as are wholly cut off, as was first demonstrated by Heschl. The similarity in other particulars of these two latter forms leads to the assumption that these also arise from inversions of the skin. This conclusion is strengthened by the distribution of dermoids whose origin points to a relation with the embryonic sutures."

Reasoning by analogy, there should exist in the median line of the back, in the sacro-coccygeal region, an embryonic basis to account for the depressions, sinuses, and dermoid cysts that occur there. From Quain[28] we obtain the following facts: "In the formation of the medullary canal the epiblast thickens to form the medullary plates, which bending round dorsally, meet in the middle line above the medullary groove and there coalesce, at first in a limited space near the middle, and later both forward and backward, so as to effect the union along the whole dorsal line, *except at the hinder incomplete part.* By this union the medullary plates and groove are converted into the neural or medullary tube, which constitutes the primary form of the brain and spinal marrow. The spinal portion (of the medullary canal) retains a more uniform, cylindrical shape, excepting toward the caudal extremity, where it is longer in being formed and remains for a time a flat, open, rhomboidal dilatation. The spinal cord has been found by Kölliker already in the form of a cylinder in the cervical region of a human embryo of four weeks. Ununited borders have been seen by Tiedemann in the ninth week toward the lower end of the cord, the perfect closing of the furrow being delayed in that part, which is slightly enlarged and presents a longitudinal median slit analogous to the rhomboidal sinus in birds."

In the adult the medullary canal lies in the centre of the spinal cord, which ends near the lower border of the body of the first lumbar vertebra. "Below here it is continued, somewhat enlarged, in the filum terminale for about half its length. Below the termination of the canal the filum is mainly composed of connective tissue, and becoming blended with the lower end of the sheath opposite to the first or second sacral vertebra, perforates the dura mater, and, receiving an investment from it, passes on to be attached with this to the periosteum of the lower end of the sacral canal, or to the back of the coccyx." The medullary canal, then, in its early history is a tube lined with epithelium and open at both ends. The upper of these ends closes early; the lower has been seen open as late as the ninth week. If it did not close there would exist an opening in the median line of the back over the lower part of the sacrum or over the coccyx. It could not be higher than this, for the vertebral canal extends down as low as the third or fourth sacral vertebra. Below this (in the sacrum) "is a triangular opening, the termination of the spinal canal, the lateral margins of which are formed by the imperfect laminæ of the fourth and fifth sacral vertebræ." This would evidently be, then, the point of exit of the medullary canal from the spinal or vertebral canal.

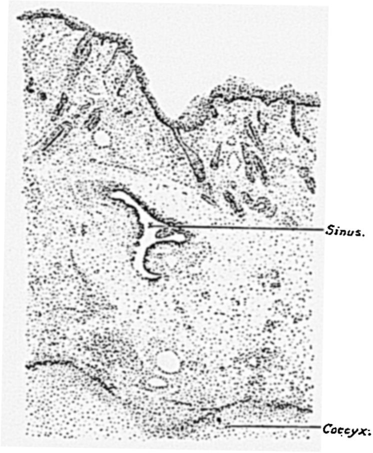
To see what light embryology might throw on this subject, a number of microtome sections were made through the sacrum and coccyx, with adjacent tissues, of several fœtuses kindly put at my disposal by Drs. W. F. Whitney and C. S. Minot. The following results were obtained:

Fœtus I.—About six months. There is a distinct canal lined with one or more layers of columnar and cuboidal epithelial cells, lying between the skin and the coccyx just below the hair follicles exactly in the median line. The lower end of it was not obtained; the upper divides into two canals, separated by a group of hair follicles; after extending through several sections, first one and then the other comes to a blind end. There are no signs of glands or hair follicles opening into the canal, which runs through over twenty sections.

Fœtus II.—About six months. Shows a canal somewhat more flattened than the above, lined with one or two layers of columnar epithelium. It occupies about the same relative position as the canal in Fœtus I.

Fœtus III.—About four months. There are present here two small cavities lined with epithelial cells, extending through a series of eight sections, as follows: Section 1 shows the epithelium of the surface dipping down in the median line; in Section 2 the epithelial cells are extending in deeper; in Section 3 a large group of epithelial cells is cut off from the surface; in Section 4 appear two cavities lined with epithelial cells; in Section 8 appears the last group of cells.

Fig. 1.



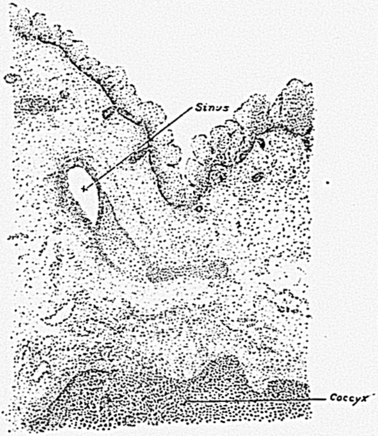
Fœtus I.

Fœtus IV.—About three and one-half months. There is in this fœtus a canal or cavity of considerable size, lined with one or two layers of columnar epithelium, placed opposite the lower end of the coccyx and having no connection with the surface of the body. Beginning at the lower end there is first a small collection of epithelial cells, extending through three sections. Then another collection of epithelial cells begins a little to one side of the median line near the surface; after extending through two sections, traces of a canal are evident; this canal rapidly increases in size; chains of epithelial cells extend downward and inward from it toward the median line; in its upper portion it is double. This cavity runs through twenty-one sections.

Fœtus V.—About three months. Shows a perfectly distinct cavity shut off from the surface and extending down to the coccyx; it is lined with one or two layers of columnar epithelium, and extends through six sections.

Fœtus VI.—About four months. Sections show irregular collections of epithelial cells near the coccyx, a little to one side of the median line; in some sections the epithelial cells are arranged concentrically so as to form tubes of small calibre; in a few sections three or more tubes are present.

FIG. 2.



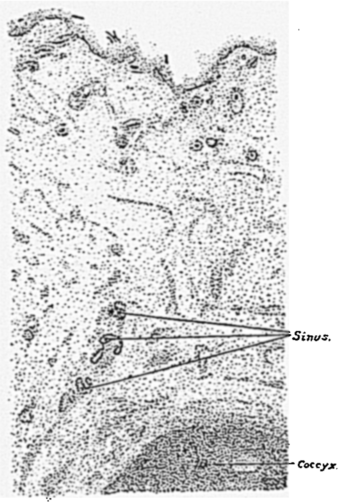
FŒTUS II.

FŒTUS VII.—About three and one-half months. No traces of a canal could be found. The medullary canal in the filum terminale shows well, extending to the lower end of the sacrum. In one part the canal is double.

These cases show that in fœtuses of three to six months there is very frequently present over the coccyx a canal lined with epithelium—in some cases connected with the skin, in others not; in some situated near the skin, in others near the coccyx. The question naturally arises as to their origin. They may be due either to an extension inward of the epidermis or to the remains of some canal. If due to an extension inward, or, as Lannelongue assumes, to the skin being bound down to the coccyx, why do they not contain the glands and hair follicles with which the epidermis in that region is studded? As regards an extension inward of the skin, why should it occur here so often and nowhere else? It seems much more likely that they are due to incomplete obliteration of a former canal, and extending, as they all do, upward and posteriorly to the coccyx, the medullary canal seems the most likely origin.

The branchial clefts are closed by the eighth week. As before stated, the medullary canal has been seen open as late as the ninth week. Consequently, the obliteration of the clefts in the one case, and of the medullary canal in the other, must take place at about the same period of intra-uterine life, with this difference—that growth is more rapid and perfect in the upper part of the body, and hence more favorable to closure of the clefts. If, notwithstanding this, sinuses and cysts occur in the neck and about the ears, there is at least an equal chance that they may occur at the lower end of the medullary canal.

FIG. 3

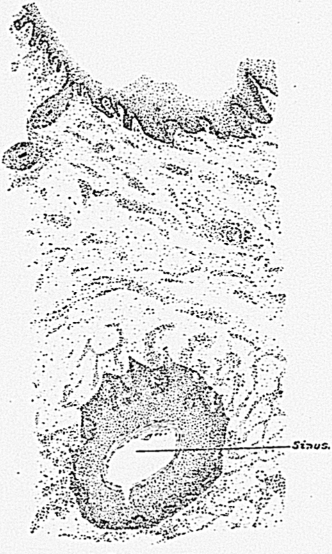


FŒTUS III.

It would seem from a study of the sections from these fœtuses that obliteration of the medullary canal takes place at first, and most completely, at the lower end of the sacrum, and extends from this point in both directions. As is well known, the spinal cord at first extends the whole length of the vertebral canal; but, as the latter grows the more rapidly in length, the cord rises and the filum terminale is stretched, thus favoring obliteration of the medullary canal at the lower part.

The obliteration of the medullary canal between the end of the vertebral canal and the skin apparently frequently takes place in an irregular manner; but, for that matter, the medullary canal in the spinal cord shows frequent irregularities, sometimes existing as a distinct canal, sometimes double, as in Fœtus VII., and often showing in sections only as a very irregular clump of cells.

FIG. 4.



FŒTUS IV.

Undoubtedly the majority of these remnants of the medullary canal become obliterated—only the larger, especially those in which glands and hairs are present, persisting as the depressions, sinuses, and cysts of extra-uterine life; and in all probability it is only the congenital sinuses and cysts which give rise to the suppurating sinuses.

Microscopical examination of sections of a suppurating sinus which has been dissected out gives little satisfaction. The walls have been destroyed by the inflammatory process, and beyond granulation tissue in which hairs are often imbedded, nothing is found. A sinus (Case

XVIII.) removed by Dr. J. C. Warren at a secondary operation, however, is very interesting. It shows a canal large enough to admit a knitting-needle, about half an inch long, both ends of which open in the median line. The central portion lies some little distance below the surface. It is lined with a pavement epithelium corresponding exactly with that of the surface of the body, but contains no glands or hair follicles. The case was probably one where there existed primarily a sinus with two or three openings, and at the first operation the upper one only was removed.

Next to the origin of these sinuses, the most important question is the cause of *their inflammation* and the source of the hairs so often found in them. Partaking, as these sinuses do, of the properties of the external skin, they also shed their cornified epithelium, and, in case they possess glands and hair follicles, the products of their secretion. So long as these products can escape, no harm is done; but if the orifice of a sinus is small, or an injury causes swelling of the tissue and closure of the orifice, the retained secretions cause irritation, and after a greater or less time suppuration follows. The pressure within the suppurating sinus may be sufficient to force out the contents occasionally; in other cases artificial exits are produced, giving rise to fistulæ on the buttocks. The most frequent cause of stopping up the orifice and of preventing the escape of the secretions is hair. Situated, as these sinuses are, between the buttocks, cast-off hairs, fibres from clothing, etc., naturally gravitating in that direction, may get into them, especially if the orifice is large. But in at least a portion of the cases the hair undoubtedly originates within the sinus. Dermoid cysts in this region frequently contain hair (Cases XIV. and XV.). Why should not the sinuses having the same origin and differing only in the fact that they are not completely closed in, produce hair from their walls also? There is no reason, however, why hair from the outside should not occasionally get into a sinus in which hair is growing and thus give a mixture, as in a case reported by Hodges; or, the hair in this case might all have come from different parts of the body. Frequently, however, the hairs in a sinus are all of one kind, suggesting a common source, such as would hardly be the case if they entered from outside. It must be noted, too, that the hair from a sinus is often of a different color from that of the rest of the body (Cases VII. and VIII.).

If, as Hodges says, hairs have such a faculty for insinuating themselves into an opening or into the skin, why are they not found in blind external fistulæ situated in almost the same place? The discharge is hardly sufficient to keep them out. Moreover, these suppurating sinuses probably do not originate in the dimples, as Hodges says, unless they are of considerable depth, but, as stated above, from the congenital sinuses and dermoid cysts. If a dermoid cyst be the origin, there will be, of course, no congenital opening into it. If, on the other hand, a congenital opening is found in the median line over the coccyx in connection with a suppurating sinus, it points positively to a congenital sinus as the origin of the latter, even if no hair is found within it. The hair may have escaped from the opening along with the pus from the cavity, or there may never have been any there. Such is probably the state of affairs in Case XIX.

The fistulous openings, the result of abscess formation, lie almost invariably to one side or other of the median line. The suppuration may also cause softening of the surface of the coccyx or sacrum (suggesting tuberculosis as the cause of the sinus), just as a wen or cyst on the scalp may erode the skull or even penetrate through into the brain.

Hair is most likely to be absent in those cases where there is a history of injury; the injury, instead of the hair, furnishing the irritation. Case XVII. (Warren) and some of Goodsall's cases (XVI.) are probably examples of this. They may have originated from open or closed remains of the medullary canal.

After I had finished my work on this subject, I received from the Library at Washington, an article entitled: "Les vestiges du segment caudal de la moelle épinière, et leur rôle dans la formation de certaines tumeurs sacro-coccygiennes." Note de MM. G. Herrmann et F. Tourneux, présentée par M. Sappey.

They made sections through the sacro-coccygeal region of fœtuses with the result of finding over the coccyx "des tubes" which they describe as "conduits flexueux assez irrégulièrement conformés. La paroi de ces tubes, épaisse d'un vingtième de millimètre en moyenne, est constituée par un épithélium stratifié affectant tantôt le type prismatique, tantôt le type pavimenteux; suivant les points considérés, l'évolution histologique de vestiges se rapproche donc de celle du tube médullaire ou de celle de l'épiderme. Sur les foetus plus âgés, les vestiges s'atrophient peu à peu à la naissance, leur plus grand diamètre ne dépasse guère d'un millimètre. Le phénomène désigné sous le nom d'ascension de l'extrémité de la moelle est donc dû non seulement à un allongement plus rapide du rachis, mais aussi et surtout à la disparition par atrophie de la portion caudale (coccygienne) du névraxe. Ce fait avait déjà été signalé par Braun chez le mouton. (His u. Braune's *Archiv*, 1882)."

Appended is a limited number of cases illustrating the main points in the paper.

As regards the surgery of these suppurating sinuses little need be said. They should be laid open, the hair sought for and removed if present, and the sinus either dissected out or thoroughly curetted so as to remove all the cutaneous surface.

Case I. (*Dunlap*).—Girl, aged eight years. A circular pit or hole in median line over coccyx, extending downward and forward to the tip of coccyx; one-quarter of an inch in diameter, and one-quarter of an inch in depth. Tip of coccyx turned backward and situated one-quarter of an inch below lower border of hole.

Case II. (*Heurtaux*).—Medical student, nineteen years. For six months had noticed some sensation in region of coccyx; a slight purulent discharge. Examination showed four congenital infundibula present, all four connected with one fistulous tract.

Case III. (*Heurtaux*).—Woman, twenty-three years. Abscess in sacral region at age of seventeen; had continued discharging ever since. Examination showed three congenital infundibula, all opening into the fistulous tract.

Case IV. (*Reclus*).—Boy, sixteen years. Brought for surgical advice for fistula which gave no trouble. Found a congenital fistula in median line between anus and tip of coccyx; orifice four to five millimetres in diameter. Sound entered two centimetres, styletto penetrated five centimetres. Slight mucous secretion with débris of pavement epithelium. Fistula ascended parallel with rectum, being distant one-half centimetre from it.

Case V. (*J. M. Warren*).—Man, twenty-five years; very hairy. Small fistulous opening on sacrum just between fold of nates; exudation of moisture for about one year; complained of soreness and inconvenience. Examination showed a small circular opening just large enough easily to admit a probe, looking as if the skin had become inverted at that point. Probe penetrated upward between one and two inches. Sinus contained hair. Had seen eight or ten cases in men; one in a woman.

Case VI. (*Walker*).—Young man. For two years a slight mucopurulent stain on shirt, and an annoying sensation about an inch and a half behind anus. Found upon examination two or three small depressions behind anus like smallpox pits; finding nothing else, he dismissed the case. Later, patient returned, having noticed some pus which had been discharged from a fistula at seat of one of the pits. Probe passed about two inches into fistula, which was closed at upper limit near coccyx. Laid fistulous tract open; two or three days later pulled out a bundle of light-brown, downy hair.

Case VII. (*Anderson*).—Man, twenty-one years; fair complexion, light hair. Six months previous received blow in sacral region. Now complains of scrofulous sore in that region. On examination found a fistula opening near the os coccygeus on left side; could not introduce a probe because the opening was so small and crooked. Four inches above and to left of opening was a tender spot; pressure here forced out mucus mixed with pus; made an opening. Three weeks later, while at work at it, drew out a black substance in loop form; proved to be soft, fine, dark-brown hair.

Case VIII. (*Heurtaux*).—Woman, twenty years. Complained of pain in region of coccyx. Found near tip of coccyx a small circular orifice three millimetres in diameter. On pressing it with end of finger had impression of small round tumor; on looking into orifice could see a small mass of something colored black; with forceps drew out with some effort a small mass of twisted hairs, some of which were evidently attached to the wall of the sinus. The hairs were light in color although the girl's hair was dark.

CASE IX. (*Terrillon*).—Young country woman. Hole present over coccyx since birth; for several years had been troubled by its inflaming; no other opening; pavement epithelium in discharge.

CASE X. (*Terrillon*).—Man, thirty-five years; very fleshy; examination showed two fistulæ in the median line, one of perfectly normal skin, size of a large sound, two and a half centimetres deep; it was congenital, and his mother had often worried about it. Since age of fifteen there had been sufficient discharge from this orifice to stain his linen slightly. Discharge contained pavement epithelium and leucocytes. Five or six fistulous openings surrounded the congenital orifice. Histological examination showed the sinus to be cutaneous in structure.

CASE XI. (*Heurtaux*).—Girl, eighteen years. Two years ago a small abscess appeared on left buttock; gathered and broke repeatedly. Examination showed four infundibula in the median line, all of normal skin, also the fistulous opening on the left buttock through which the abscess discharged. A probe could be passed between the two lower infundibula. The two upper ones also communicated, and from them arose the abscess. The sinuses were removed entire, and showed no especial attachment to the bones.

CASE XII. (*J. M. Warren*).—Woman, twenty years. Fell on ice one year before; soon after experienced pain in region of coccyx. Examination by sister disclosed a fistulous opening at junction of sacrum and coccyx. This had discharged thin, unhealthy pus, up to time she entered hospital. Then found two fistulous openings in median line, one at junction of sacrum and coccyx, the other about an inch above it. A probe could be passed both upward and downward for a considerable distance. The sinus was laid open, and at the bottom of the abscess was found a coil of hair.

CASE XIII. (*Desprès*).—Girl, thirteen years. Dermoid cyst in coccygeal region; no adhesions to the deeper parts, hence not a spina bifida. "These tumors may form abscesses and give rise to fistulæ."

CASE XIV. (*Lannelongue*).—Boy, four and a half years. A slight projection was noticed in the sacro-coccygeal region shortly after birth; increased to the size of a chestnut; removed; contained a few drops of liquid, the rest consisting of epidermal cells and a few hairs; the wall showed sebaceous glands and hair-follicles.

CASE XV. (*Trzebicky*).—Woman, thirty-five years. A year and a half ago noticed a swelling on left buttock; grew larger than a child's head; it was situated a little to one side of the median line, and consisted of two separate tumors; fluctuation extended into the pelvis. Operation: pus-like contents; many fine hairs; horny epithelium. The two cysts did not communicate.

CASE XVI. (*Goodsall*).—Female, thirty-five years. Four years before fell and struck near the sacro-coccygeal articulation. The part remained always tender. Five months after the fall an abscess formed, and two months later began to discharge. Examination showed several sinuses. Laid open.

CASE XVII. (*J. M. Warren*).—Girl, nineteen years. Three years before, while sliding on the ice, she fell and received a severe blow on lower part of spinal column. Pain and tenderness for several days; afterward was unable to bear the least pressure on the part, while there was a constant sense of uneasiness in it. About a year before a swelling commenced there; became the size of a walnut; punctured by her physician, and a curdy matter discharged. After that a serous fluid continued to flow. Cyst laid open. The interior of the cavity presented that white, silvery, epithelial aspect observed in the sacs of some encysted tumors.

CASE XVIII. (*J. C. Warren*).—Woman, twenty-three years. Had a small abscess appear in the median line just over sacro-lumbar articulation when fifteen years old. Small spontaneous opening, which had existed ever since. Occasionally closes, forms a new abscess, and breaks again. Two years ago was operated by Dr. Barrett, of Concord. Sinus laid open; healed, but broke again in three or four months. More or less discharge ever since.

Examination: Has a sinus size of knitting-needle in median line over base of sacrum at beginning of fold between buttocks. Probe enters, two inches; no bone felt.

Operation, Dr. Warren: Incision upward and outward on either side of median line. Cavity was filled with pyogenic membrane, which was thoroughly curetted out. In the midst of this membrane was a clump of long hairs.

Re-admitted February, 1890. Two weeks ago had an abscess in fold of buttock, which broke and discharged about one drachm of pus.

Examination: Two small sinuses in fold of nates about half an inch apart, and two inches from anus. Probe admitted with difficulty a short distance. Removed entire.

CASE XIX. (*Beach*).—(I was present at the operation in this case through the courtesy of Dr. Beach). Girl, seventeen years. Perfectly well up to present trouble. About six weeks ago an abscess formed over coccyx and lower part of sacrum. In three days "broke"; more or less discharge since. Examination showed a perfectly round, clean-cut opening in the skin size of a large probe, half an inch above the tip of the coccyx in the median line. One-fourth of an inch above this opening was a small pit in the skin, in no way connected with the sinus. The sinus extended one and one-half to two inches upward, and laterally on the right side about one-half inch, and on the left one inch. Below the opening the sinus was small, admitting a large probe for about one inch. A fine probe penetrated a little further. The sinus formed a perfectly clean cavity with fibrous walls. The coccyx was movable, and the end of it gave a questionable sensation of crumbling. The sinus was laid open, curetted, and packed. The patient was discharged at the end of twelve days with a granulating wound.

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SUPPURATING CONGENITAL CYSTIC KIDNEY, WITH HYDRONEPHROSIS AND OBLITERATION OF THE URETER.

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A careful search through medical literature would seem to warrant the assertion that the following case is unique, for although several cases have been reported in which hydronephrosis has been found associated